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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/710,388 09/16/96 SINGHAL

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LM01/0622

EXAMINER

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ART UNIT

PAPER NUMBER

2736
DATE MAILED:

06/22/99

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
08/710,388

Applicant(s)

Singhal

Examiner

John Tweek

Group Art Unit

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Responsive to communication(s) filed on Apr 12, 1999

This action is FINAL.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

Claim(s) 23-38 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

Claim(s) 29-36 is/are allowed.

Claim(s) 23-28, 37, and 38 is/are rejected.

Claim(s) _____ is/are objected to.

Claims _____ are subject to restriction or election requirement.

Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The drawing(s) filed on _____ is/are objected to by the Examiner.

The proposed drawing correction, filed on _____ is approved disapproved.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All Some* None of the CERTIFIED copies of the priority documents have been received.

received in Application No. (Series Code/Serial Number) _____.

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

Notice of References Cited, PTO-892

Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

Interview Summary, PTO-413

Notice of Draftsperson's Patent Drawing Review, PTO-948

Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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1. This Office action is in response to the amendment filed 4/12/99. Claims 23, 25, and 38 have been amended.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a previous Office action.
3. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Paley** in view of **Will** [U.S. 5,477,508] (supplied by applicant).

For claim 23, the remote control device adapted for use by a human to control and select from a screen taught by **Paley** includes the following claimed subject matter, as noted, 1) the claimed body adapted to be held by the human hand is met by the mouse (No. 10) with hand-held housing (No. 12) adapted to be held by the human hand, 2) the claimed thumb switch positioned on the top side of the body is met by the thumb push button (No. 18) mounted on the hand-held portion of the housing, adapted for activation by a human thumb as seen in Figure 1, 3) the claimed finger switch positioned on the bottom side of the body is met by the index finger push button (No. 20) disposed on the opposite side for activation of the finger, 4) the claimed electronic means adapted to generate a signal is met by the microswitches (Nos. 40, 42, and 44) that generates signals upon activation of the switches, and 5) the claimed transmitting means is

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met by the cable (No. 26) for transmitting the signal from the electronic means. However, the thumb switch in the reference is not adapted to perform multiple functions.

The control of digital watch using menu and thumbwheel taught by **Will** includes a method and apparatus for control of a digital watch and associated functions. Not only is the thumbwheel (No. 3) of the invention adapted to select choices from a menu displayed on the screen, it also increments or decrements whichever parameter is being adjusted, such as minutes. The obvious advantage of this configuration is to provide a method for the control of the watch that is particularly easy to use and learn, and for which the user is likely to retain the skill of using even after long periods of not using particular functions. It also makes it possible to include complex functions without the necessity of providing additional keys.

The reference taught by **Will** is clear evidence that a thumb switch can be used to enact and control multiple functions in a hand-held device. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a thumb switch adapted to perform multiple functions into the hand-held device of **Paley** for the purpose of including complex functions without the necessity of providing additional keys.

4. Claims 24, 25, 27, 37, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Paley** in view of **Will** as applied to claim 23 above and further in view of **Miyakawa** [U.S. 4,931,781].

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For claim 24, the combination of references includes the claimed subject matter as discussed in the rejection of claim 23 above. However, nowhere in the references is there any mention of an annular switch including four individual quadrant switches. All that is present is a central switch operated by the user's thumb.

The cursor movement control key switch taught by **Miyakawa** controls the movement of a cursor on a display screen. As seen in Figure 20A-20C, an annular switching device (No. 306) slides between four quadrant contacts (Nos. 308 and 310) to produce cursor control signals to the CPU (No. 9) which examines the terminals of said contacts. Commercially available switches may be used in place of the pressure balls (Nos. 307 and 309) and said spring contacts. Natural movement of the finger of an operator to move a single key allows generation of electrical signals representing more information. The obvious advantage of this configuration is the improved operability when the cursor must be moved in a plurality of directions to reach a desired position.

Since both **Paley** and **Miyakawa** pertain to cursor control apparatus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate an annular switch using four quadrant switches similar to that of Miyakawa for the purpose of increasing the operability and the versatility of the switching apparatus. The two separate switches presented by the references operate independently from one another. Also, the compound switch structure enables many functions to be enacted with a single switch.

For claim 25, the claimed thumb base plate is met by the retaining plate that holds the plurality of spaced apart switch contacts (Nos. 308 and 310). The claimed thumb switch plate is

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met by said annular switching device (No. 306) of **Miyakawa** which is adapted to move relative to the thumb base plate, wherein the switch plate selectively contacts one of the contacts upon sufficient movement of said switch plate. **Paley** teaches electrical contacts which are fixed relative to the body.

For claim 27, the CPU (No. 9) of **Miyakawa** includes logic converting means that respond to the embodiment shown in Figures 9 and 11A-D wherein the distance and speed of the cursor varies according to the degree of finger pressure on the quadrant switch and duration of contact.

For claim 37, the **Paley** reference presents a center switch. The **Miyakawa** reference presents an annular switch. The two switches operate independently from one another.

For claim 38, the claimed four individual quadrant switches is met by the switch shown in Figures 5A and 5B as well as the thumb base plate being met by the retaining plate of **Miyakawa** that holds the plurality of spaced apart switch contacts (Nos. 308 and 310). The claimed thumb switch plate is met by said annular switching device (No. 306) which is adapted to move relative to the thumb base plate, wherein the switch plate selectively contacts one of the contacts upon movement of said switch plate. **Paley** teaches electrical contacts which are fixed relative to the body.

5. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Paley** in view of **Will** as applied to claim 23 above and further in view of **Ebina et al** [U.S. 4,812,829].

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The combination of references includes the claimed subject matter as disclosed in the rejection of claim 23 above. However, there exists no slidable finger switch plate which is adapted to be moved by a human finger.

The three-dimensional display device and method for pointing displayed three-dimensional image taught by **Ebina et al** comprises a display, input, and controller to manipulate a three-dimensional vector cursor in response to the pointing signal from the input. As seen in Figure 1, the input device (No. 105) includes a joystick (No. 108) as well as a slidable volume (No. 109) for controlling the velocity of the vector cursor. The velocity vector of the cursor is varied by manipulation of the joystick and slide volume to change the direction and speed, respectively. The object of the present invention is to provide a three-dimensional image on a two-dimensional plane and which can point to the three-dimensional image easily and precisely.

Since both **Paley** and **Ebina et al** pertain to cursor manipulation devices, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a slidable finger switch including the necessary contacts for the purpose of enabling easy and precise manipulation of the cursor in a flexible, three-dimensional environment. **Paley** teaches electrical contacts fixed relative to the body.

6. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Paley** in view of **Will** as applied to claim 23 above and further in view of **Evans et al** [U.S. 5,412,377].

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The combination of references includes the claimed subject matter as discussed in the rejection of claim 23 above. However, the reference does not include an electronic display window secured to the body which generates status information on said display.

The universal remote control program scheduling system taught by **Evans et al** includes an apparatus for scheduling operating sessions to be performed by a group of remotely controlled devices. An important feature of this invention is the display (No. 12) which may be a LCD display or other such system. This display is used for multiple reasons, such as a clock, the name of the key or function to be operated, error messages, and status information. This display device enables the user to be continually informed of status information to reduce the number of programming errors during operation of the device.

Since both **Paley** and **Evans et al** pertain to remote control manipulation, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include an electronic display window similar to that found in Evans for the purpose of continually notifying the user of system status and, as a result, minimizing the errors that could arise during apparatus manipulation and programming.

7. Claims 29-36 remain allowed.

Response to Arguments

Argument 1:

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“Miyakawa discloses a switch which uses a circular, key top 306 which slides and makes contacts with a plurality of spherical balls 309 and plate spring contacts 310. In contrast Claim 24 requires a center switch and an annular switch which surrounds the center switch...Even if Paley can be combined with Miyakawa, the circular switch of Miyakawa would not allow for it to encircle the switch of Paley. Instead, assuming that Paley can be combined with Miyakawa, the resulting switches would have to be adjacent each other. Thus, the user would have to remove the finger from one switch to maneuver the other switch.”

Argument 2:

“Further, there is no teaching or suggestion to combine Miyakawa with Paley. In order to combine the references, there must be some teaching within the references themselves which teaches or suggest (sic) the combination...It is irrelevant that the individual elements of Applicant’s invention may be found elsewhere in the prior art, extremely modified, and reconstructed to achieve Applicant’s invention without any suggestion from the prior art to make the combination.”

Argument 3:

“Claim 25 requires that at least one of the quadrant switches includes a plurality of spaced apart electrical contacts and a thumb switch plate which is adapted to move relative to thumb base

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plate, wherein the thumb switch plate selectively contacts each of the electrical contacts upon sufficient movement of the thumb switch plate relative to the thumb base plate.

Neither of the cited references teach or suggest this feature. In particular, Miyakawa teaches the use of a single, cantilevered electrical contact for each switch. Paley teaches the use of a simple, single contact switch.”

8. Applicant’s arguments filed 4/12/99 have been fully considered but they are not persuasive.

Response to Argument 1:

In response to applicant’s argument that the circular switch of Miyakawa would not allow for it to encircle the switch of Paley, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Response to Argument 2:

In response to applicant’s argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the

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teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, both references pertain to cursor movement control on a display screen and the improvements thereof. This is considered ample suggestion and motivation to combine and/or modify the teachings of the two references.

Response to Argument 3:

This assertion is incorrect. The control key switch described by Miyakawa as shown in Figures 6A and 6B clearly depict spaced apart electrical contacts (Nos. 7₁-7₄) and a plate switch (No. 5₁) which is adapted to move relative to the base of the keyboard. The switch plate selectively contacts each of the electrical contacts upon sufficient movement of the thumb switch plate relative to the keyboard.

9. Any inquiry concerning this communication should be directed to Examiner John Tweel at telephone number (703) 308 7826. The examiner can normally be reached on Monday-Friday, 8:30a-5:00p.

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If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Hofsass, can be reached on (703) 305 4717. The fax phone number for this group is (703) 305 3988.

Brent A. Swarthout

John Tweel

June 19, 1999

**BRENT A. SWARTHOUT
PRIMARY EXAMINER**